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ABSTRACT

The paper focuses on the growth and development of special education for learning disabled children in Chile with particular emphasis on the contribution of child psychiatry and pediatric neurology departments of hospitals and the contribution of universities in training specialists. Initial sections provide a background on primary education in Chile and a review of socio-cultural characteristics which affect the types of problems encountered in special education in underdeveloped countries. A third section outlines the history of special education in Chile. A final section describes the functioning of the special education system in terms of diagnosis and rehabilitation of learning problems, a case study of a child with reading problems, methods of diagnosis and evaluation, and research in such areas as teaching reading and clinical investigations. A growing interest in diagnosis, treatment, and research in reading problems is attributed to high incidence of early school failure and lack of research on and materials for Spanish learning disabled students. (SBH)

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SPECIAL EDUCATION FOR THE LEARNING DISABLED IN CHILE

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I. INTRODUCTION

Background of Primary Education in Chile.

Primary (or Basic) education in Chile consists of eight (8) years of schooling, is compulsory and free of charge. It is estimated that in Chile there are a sufficient number of Public Schools and teachers to educate all children under the age of 14. The school system is centralized and directed by the Ministry of Education. The Ministry of Education specifies the academic curriculum and the teaching methodologies that should be used.

Chilean children must enter first grade at six years of age and their advancement is determined by means of their teachers' subjective evaluation at the end of each grade.

Each child is evaluated according to his mastery of the contents of the academic program. At the end of the 8th (eighth) grade the students may enter a new four year cycle called secondary education (High School).

The greatest problem in primary education in Chile is the high percentage of children repeating grades. Children are held back in a grade if they fail to pass the annual evaluation or if they fail to master the subject matter required by the official academic program.

The following table represents the number of children who were enrolled in each primary grade and the percentage of children repeating each grade for the academic year 1976.

TABLE I

Enrollment by Grade, 1976		Percentage of Holdovers by Grade, 1976 %
1st grade	354,745	18.8%
2nd "	325,917	15.7%
3rd "	319,136	13.1%
4th "	302,601	12.7%
5th "	287,022	14.0%
6th "	268,321	11.5%
7th "	220,539	16.0%
8th "	176,839	9.0%

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This scholastic failure has spurred the growth of a national special education program.

Among the causes that have contributed to this failure are: the verbal and cognitive inmaturity of the children from low socio-economic groups who enter first grade of primary school, and cannot assimilate into the regular school program because they haven't had any pre-school education; a large number of working class and rural children who manifest an intelligence that is primarily nonverbal, and that will be of little help to them in the first grades in an academic learning situation; the presence of specific learning disabilities, especially dyslexias and dyscalculias; and, to a lesser extent, mental retardation.

From the point of view of the schools among the causes of this massive holdover rate are: the use of inflexible plans and programs of study designed to be used by all and not adapted to the cultural differences among the children, the use of verbal teaching methodologies, without the aid of audiovisual techniques, and a highly subjective system of annual evaluation.

Since 1968 the educational authorities have encouraged the development of special education for learning disabilities as a partial solution to this problem.

II. LEARNING PROBLEMS AND CULTURAL DIFFERENCES

Before describing Chilean special education, it is important to describe certain socio-cultural characteristics that will enable the reader to better understand the types of problems that are encountered in special education in underdeveloped countries.

In a previous publication we differentiated the origins of two types of academic difficulties: "general learning problems" and "specific learning disabilities". The specific learning disabilities have their origin in the biological alterations and dangers of infantile development and they are not solved by using the ordinary pedagogic methods. (Bravo, 1973.)

This is true for example, of specific dyslexia and the dyscalculias. Specific learning disabilities are associated closely with "high risk" children. The incidence of "high risk" children is generally greater in the poverty sectors, according to Birch and Gussow, 1970.

It is probable that the percentage of children with specific learning disabilities is greater in the underdeveloped countries,

owing to malnutrition, unsanitary conditions, less intellectual stimulation, etc. We would also expect to find a higher percentage of mentally retarded children in these countries. (Bravo, 1975.)

All of the children with specific learning disabilities need special education in order to overcome their academic difficulties.

On the other hand, "general learning problems" could be solved within the regular school curriculum, because they are not caused by a psychoneurological dysfunction or damage that alters the abilities of the child.

These problems arise principally from the child's psychological and social inmaturity and consequent inability to follow the programs of study, brought about by insufficient cultural stimulation and insufficient motivation for academic activities, or from the use of inadequate academic programs and methods.

In the United States and other developed countries when "culturally deprived" children are discussed, these children are defined in terms of "sub-cultural minorities" in comparison to the great majority of children who have had sufficient stimulation and who have been well motivated towards academic learning.

In those countries, the problem of poverty affects a minority of children who must receive special help in order to compensate their cultural deficiencies.

This "minority" of children must adapt themselves to the cultural and academic level of the majority of the students in order to succeed in school.

This is not the case in the underdeveloped countries. In these countries the poor children constitute the majority and they must follow the program of studies for the "minority", the middle class children. That is to say, the proportions are reversed and the number of children who have problems following the regular academic system is very high.

The children who belong to the "poverty majority" show retardation in their cognitive and linguistic maturation that affects their academic performance and produces general learning problems.

Chilean research has shown the academic maturity in children who are entering public schools is very different from that of children entering private schools. (Bravo, Moya, Salas, 1975.)

Children from the culturally deprived sectors of society will generally not finish the eight years of primary education, owing, probably, to a lesser cognitive and linguistic maturation.

This disadvantage in the psychological maturation of the basic functions could be one of the principal causes of the high number of children with general learning problems that are left back or drop out of school in the underdeveloped countries that do not offer differential programs.

For this reason, when we discuss special education and the difficulties in learning to read, it is important to know that not all of the children who have learning problems must be taught in special schools nor do all of them have specific learning disabilities. Nevertheless, frequently the scarcity of diagnostic services and the rigidity of the traditional academic system, keeps the children from the "sub-culture of poverty" from receiving an adequate education in their own schools and they must be held over in their grade, or their parents request their admission to special schools. In our countries many reading difficulties have a cultural rather than a clinical origin.

The same phenomenon can be seen when we try to measure I.Q. with tests that have been validated using the criteria of academic performance. Children from working class families who have difficulty in learning to read also do poorly on traditional tests, owing to their linguistic differences from middle class children.

This factor undoubtedly adds to the percentage of children with apparent mental retardation, due to the fact that the traditional tests (Terman for example) have been designed to measure "academic intelligence" which is culturally determined.

As many of these tests have been validated with an external criteria of academic performance, it is natural that the children who have culturally caused learning problems will also receive low scores on these tests. Then it is mistakenly assumed that the cause of the reading problem is low intelligence. This is why for a long time the major focus of special education was on the problems of mental retardation and not on socio-cultural differences and on learning disabilities, that make school programs designed for middle class children useless for children with different sub-cultures.

Historical Antecedents

Publicly financed special education began in Chile in 1852, with the creation of a school for deaf-mutes, which subsequently added a class for blind children.

In 1928 and 1929, three schools for children with behavior disorders and another school for the blind were opened.

In 1945, several schools for mentally retarded children were established along with a few special classes for retarded children within the regular schools. The first psychological Diagnostic Center, called a "Psychopedagogic Clinic", was created in 1955.

Finally, the 1960's saw the opening of various types of special schools annexed to pediatric hospitals. These schools served both as diagnostic centers and rehabilitation centers for specific learning disabilities.

A review of the creation of special schools in Chile would show that between 1852 and 1951 there were six Special Schools; between 1953 and 1958, 5 more schools were opened. In the decade between 1960 and 1970, 37 new special schools were opened.

Finally, in the present decade, 107 special schools have been created which work with different types of developmental deficits (mental retardation, sensory and motor deficits, specific learning disabilities, etc.).

The number of children serviced by these schools annually is approximately 20,000.

Since 1975 planning in the field of special education has been oriented towards the creation of diagnostic centers, psychopedagogic support teams for the regular schools, special classes within the regular schools and vocational training centers for handicapped children.

III. THE DEVELOPMENT OF SPECIAL EDUCATION FOR LEARNING DISABILITIES

In describing the growth and development of special education for learning disabled children in Chile it is necessary to emphasize two essential elements: the contribution of the child psychiatry and pediatric neurology departments of the hospitals, and the contribution of the Universities in the training of specialists.

In the absence of pediatric diagnostic centers, the requests for help for children with learning problems were principally

directed to the children's hospitals that had children's psychiatric and neurological services.

Until 1975 the pediatric hospitals bore the complete burden of both diagnosis and rehabilitation of children with developmental disturbances.

Thus in a mental health report in 1971 it was stated that of the children diagnosed by these hospitals, 50% presented an intellectual retardation, 30% were dyslexic, and 10% showed low scholastic achievement due to emotional problems.

The contribution of the child psychiatry and pediatric neurology services to special education was not limited solely to the diagnostic and treatment aspects, but also included clinical investigation of specific learning disabilities and offering teachers a clinical picture of disabilities such as minimal brain dysfunction, specific dyslexia, epilepsy and mental retardation. This work done by the hospital services was strengthened enormously by the work done in the annexed special schools by clinical psychologists who helped the teachers understand the psychopathological aspects of learning disabilities.

Until the 1960s most of the teachers who worked in special schools were self-taught and never had received any systematic training.

It is interesting to consider that one of the most valuable things that education received from the clinicians was a change in the pedagogic orientation. The teacher almost always thought in terms of the problems of his class or group instead of using an individualized or clinical approach, adapted to each particular child. This change in perspective came about through the participation of the special education teachers in the clinical meetings of their affiliated hospitals, where each child was discussed, and an individualized treatment plan was developed.

The second fundamental support was given by the Universities creating post-graduate courses for training teachers of special education. Students in these programs were experienced primary school teachers.

In 1968, the Universidad Católica de Santiago began a post-graduate special education program in learning disabilities.

This program lasts three years and includes courses in developmental psychology, learning psychology, child psychopathology, neurology, speech and language, diagnosis, education of children with reading and arithmetic disabilities, and family counseling.

The Program ends with practice teaching of learning disabled children, in a public special education school.

The Catholic University of Chile was the first Chilean university to begin teacher training and research in the area of learning disabilities. Historically this action was important as it contributed to changing the emphasis of special education in Chile.

Until this time, the principal preoccupation in this educational area was centered on mentally retarded children and those with sensory or motor handicaps. Thereafter, the focus began to shift towards learning problems in children without mental retardation or sensory deficits. This new outlook indirectly pointed up the necessity of evaluating the entire system of primary education, its plans and programs, and the need to know the incidence and degree of learning problems presented by children in primary school, especially those of the children coming from the "sub-culture of poverty".

The Catholic University in 1970, alerted the Ministry of Education to the "urgent necessity" of establishing a national policy regarding the training of teachers specializing in the rehabilitation of non-mentally retarded learning disabled children.

Until 1974, the Ministry of Education, the universities, and the National Health and Educational Services had acted independently. There were sporadic meetings which produced no operational results.

This lack of coordination hindered the establishment of a joint program in the area of learning disabilities.

In March of 1974 a national Conference on Special Education was held. This seminar was organized jointly by the Ministry of Education, the Universidad Católica and the Universidad de Chile.

This conference, which was attended by more than 300 specialists, had the following objectives: assess the current status of special education in Chile, and to formulate a basis for a national policy towards public special education.

It would be useful for a better understanding of the development and orientation of special education in Chile to discuss some of the conclusions that came out of this March 1974 Conference.

In the first place, it was felt that the training of specialists should be primarily the responsibility of the universities.

Moreover, every teacher would be trained to work within the regular schools with children with minor learning disabilities, and the curriculum for training all pre-school and primary school teachers would include sufficient training in learning disabilities to permit early detection of learning problems.

Furthermore, it was considered urgent to establish many diagnostic centers to be affiliated with both hospitals and rehabilitation centers, where multi-disciplinary diagnosis would be able to be done.

Agreements for exchanges of professionals between the areas of education and health were sought for these centers.

Finally, this conference noted the necessity for a nation-wide reform of primary education, proposing the use of a very flexible system of academic advancement by levels of education rather than courses, according to the level of psychopedagogic maturation of the children.

The results of this conference were twofold: it was the first nation-wide meeting in Chile of all the specialists, from all of the institutions that worked in any way with special education, with the goal of planning a national policy and making a public evaluation of the system; and it was the first time that the educational authorities publicly accepted the challenge presented by this problem and tried to confront the problem in a global manner.

The problem of diagnosis and remediation of learning disabilities and mental retardation, was no longer centered in the children's psychiatric and neurologic services of the hospitals, but became a responsibility of the educational sector.

This policy increased the urgency for the creation of diagnostic centers.

In April 1974, as a result of this conference, the government created a commission on special education in order to concretize the above mentioned policies.

This commission consisted of eleven specialists representing all of the universities in Chile with special education programs, representatives of the Ministry of Education, and representatives from private educational facilities.

In December 1975, this commission delivered its report. We will summarize some of the conclusions of this commission that are relevant to this article.

a) Special education was defined as "a differentiated and interdisciplinary specialization of regular education, addressed to those children who, whether due to transitory or permanent causes, are prevented from following the regular educational program". Special education must not constitute a segregated or independent entity, apart from the general educational system, but must make its principal objective to incorporate the child as quickly as possible into the mainstream of education.

To this was added the statement that "children with physical or psychic deficiencies cannot be maintained indefinitely in a segregated educational structure, however perfect that structure might be in itself, because at the end of his school years the student's integration into the social and economic communities will be even harder".

In this paragraph it was clearly expressed that special education does not constitute a different educational system, rather an interdisciplinary differentiation or regular education, applicable to individual case (as needed).

The relation between special education and regular education was expressed thusly: "The effectiveness of special education can be seriously compromised if it must receive an overpopulation of children due to inadequacies in the regular education system. Chilean primary education doesn't have sufficient flexibility and differentiation in its programs and methodologies to permit the schools to adapt to the characteristics of the children. The rigidity of the traditional programs stops children with minor difficulties from receiving individualized instruction, and this in turn contributes to the high number of students annually who fail academically without having specific disabilities."

Consequently, the commission felt that the plans for special education must be complemented by a plan for regular education

that could be adapted to the psychological differences of the children in order to avoid the unnecessary proliferation of learning problems.

The report concluded by stating that the work of special education as an interdisciplinary process must be complemented by preventive pre-school education.

b) The National Commission on Special Education effected a survey of existing special education resources which indicated that until that year there were 92 special schools that were serving 10,000 children, distributed among various types of mental retardation, defects in speech and hearing, vision, motoric processes, behavior disorders and multiple handicapped.

c) Solutions proposed. There were in addition only four diagnostic centers in all of Chile. Upon completion of the survey of special education the commission recommended that several new diagnostic centers be created and located in different regions of the country.

Moreover, the commission suggested a new solution for the cities that still wouldn't be able to maintain a diagnostic center. This idea was for the creation of psychopedagogic support teams that would diagnose the children who presented problems, and guide their regular teachers in the remediation of the learning problems.

These teams consist of a psychologist and two special teachers, are mobile within a Province or Region, and serve as a base for future diagnostic centers.

Both the diagnostic centers and the psychopedagogic support teams were created by a law passed in May of 1975. For children with mild learning disabilities and mild mental retardation, special groups with few pupils (called "grupos diferenciales") were started in the regular schools. In 1977 in Chile there were in addition to the hospital centers, 107 public Special Schools and private facilities, 2,200 special groups in regular schools with 13,200 children, 16 Psychopedagogic Support Teams and 8 Diagnostic Centers.

In summation, the structure of special education in Chile has changed over the past few years, now focusing greater interest on learning problems rather than on mental retardation. The Special Education Commission used the concerns of the teachers and specialists as a basis for formulating a special education plan that was both operational and applicable to the reality of the educational system.

The results of this Commission are emerging slowly, owing to the administrative and economic obstacles that required a change in a sub-system, within a more complex educational system that did not develop from the same philosophical framework.

We can conclude this brief historical retrospective of special education in Chile by stating that the principal changes that have been observed since 1975 are the following:

a) An increase in the amount of treatment (nearly 20,000 children in 1977).

b) A change in the focus of special education - away from mental retardation and towards the problems presented by learning disabilities, and their relationship to the primary education curriculum.

c) A change in a policy that dated back to the last century of creating special schools, to a policy of creation of special groups in the regular schools, diagnostic centers, and Psychopedagogic Support Teams.

d) Transfer of the principal responsibility for diagnosis of students with learning difficulties from National Health Centers to Centers supervised by the Ministry of Education.

e) The extension of special education as rehabilitation on the primary level, to special education as a preventive or compensatory measure in the nursery schools and kindergartens.

IV. FUNCTIONING OF THE SPECIAL EDUCATION SYSTEM

a) Diagnosis and Rehabilitation of Learning Problems

As we have seen, the Chilean Special Education System consists of the psychoeducational diagnostic Centers, the Special School, the Special Groups in the regular schools, and the Psychopedagogic Support Teams that function in the cities where there is no diagnostic center.

There also are private rehabilitation centers, such as the "Institute of Applied Psychology" and other cooperative centers, financed by the parents of children with problems (e.g. COOCENDE). These centers primarily work with children referred by private schools.

We shall present a case study in order to show how children with specific learning disabilities are diagnosed and treated in Chile.

b) A Case Study of a Child with Reading Problems

Juan, age 7, from a working class family, was in the 2nd. grade and hadn't learned to read.

He read only syllables, presenting inversions (al-la), confusion of letters (m-n), and a low level of reading comprehension.

His teacher had made him repeat a school year, but repeating the grade had not helped his reading. Rather Juan's being left back produced emotional problems (depression) and behavior problems (irritability, reluctance to attend classes).

His teacher referred him to a diagnostic center where a team composed of a psychologist, a special education teacher, and a speech and hearing therapist established that he had a normal I.Q. (WISC; verbal I.Q. 102; performance I.Q. 91) and a graphomotor retardation (Bender, developmental age: 6 years). He showed no language retardation. On the other hand, he had left-right confusion, mixed dominance (left eye and right hand dominant) and problems in perceiving rhythm. Auditory perception was normal. Then the child was sent for a neurological examination, where his EEG showed mild difuse alterations indicative of cortical bilateral inmaturity, involuntary kinesthetic movements and motoric torpidity. Sight and hearing acuity were normal.

The final diagnosis was "specific dyslexia", secondary to a minimal brain dysfunction in the perceptual-motor areas; intelligence normal.

The diagnostic center referred the child to a rehabilitation center for treatment. Here he was taught to read using a method we shall describe in detail later. After a year the child could read fluently.

During the interviews with parents, methods for handling the child's emotional problems were discussed and explained.

By looking at this sample case we have been able to see how the special education system functions. The child with learning problems is sent to a Diagnostic Center which is staffed by psychologists, special education teachers, and speech-hearing therapists. These professionals do psychological and educational

evaluations and then send the child to a hospital where medical examinations (principally neurological and sensory) are made, if required.

Then a formal diagnosis is made and the child is sent for individual or group treatment (six children), according to the problems presented, in classes of two hours each, two or three times a week.

The child continues to attend his regular school, but with less demanding evaluations, until his reading difficulties have been remediated.

In the cities where there still are no diagnostic centers, the child is examined by a Psychopedagogic Support Team (psychologist and one or two special education teachers).

The remediation method employed in this case was the following:

1) Development of a sight vocabulary.

   The child is first taught a group of words that in general, don't have concrete mediation and are used very frequently: these, with, will be, some, all, also, when, etc.

   The child must be able to recognize these words automatically when the words are shown printed in large letters.

2) Phonetic analysis (at the same time): the child must learn that the combinations of letters correspond to specific sounds. (He is shown the letter and associates it with its corresponding sound).

3) Following this method the auditory discrimination of the beginnings and endings of words is worked on along with the visual perception of the same beginnings and endings. (Teacher shows the word and pronounces it; then children do the same.)

4) Letters are taught associating the corresponding sounds and forms with a motor activity or gesture. This is taught as a progression using combinations in which appear only letters previously studied by the child. In this method, as the child acquires the mechanisms of reading, the dependence on gestures is gradually eliminated.

5) Along with the teaching of letters there is a gradual introduction of different combinations of letters used to form words. The degree of difficulty is controlled and the child begins with direct syllables (la), then proceeds to the inverse (al), and finally to complex syllables (lla, alas).

It is important to note that in the Spanish language the letters always have the same pronunciation, with few exceptions, and this facilitates the learning of letter-sound associations.

6) When the child is taught the consonant groups, or phonograms (pl, br, etc.), the same method is used as was used for the simple syllables.

7) The exercises for prevention of specific errors are principally based on the phonograms and complex syllables most frequently confused (e.g.: palta - plata).

8) Writing is taught through the copying and dictation of phrases and sentences.

9) Once the child has mastered this stage he begins to read in books with large type, brief stories, and drawings related to the text. This method of teaching reading is individual, and useful for teaching reading (of Spanish), to high risk children with specific learning disabilities, or to children who are experiencing difficulties in the first stages of learning to read.

c) Methods of Diagnosis and Evaluation

The diagnostic methods used in Chile in the Diagnostic Centers by the psychologists and learning disability specialists have two origins. First of all, there are the traditional tests that are used internationally, WISC, WIPSS, Bender, Frostig, Binet - Terman, Zazzo's battery of Psychopedagogic tests, Piagetian tests, Metropolitan Readiness test, etc.

Secondly, there are the tests designed and standardized in Chile. We will briefly describe some of these.

1) The test for Specific Errors and Reading Level by Condemarin (PEDE) is designed to evaluate specific errors in reading and the reading level of children who are beginning to learn to read. The test can be used for diagnosis of reading retardation and specific dyslexias in children between 6 and

10 years of age. This test is individually administered. The child responds orally, reading the syllables and words, or pointing to the syllables read by the examiner. The test has been standardized in Chile for children from first to fifth grade. (Berdicewski, Milicic, Orellana, 1977.)

2) Another test is the reading-writing test of Olea. This test is composed of two sub-tests. A reading-writing sub-test, for diagnosis of errors in reading and writing, from the recognition of letters up through the level of comprehension of passages; and a sub-test of basic psychological functions, designed to evaluate visual perception, auditory perception, spacial orientation, laterality, and eye-hand coordination. These tests are administered individually and from them we derive a percentage that determines the degree of reading retardation of the child and the amount of retardation in the maturation of the basic function. Unfortunately, the author of this test has not issued a definitive publication of the test and the final standardization has not yet been completed, but several research studies have shown this test to have a high level of validity. (Olea, 1977.)

3) The test of basic psychological functions by Milicic and Berdicewski, 1976, is designed and standardized for use with pre-school children.

The test is used to determine the level of maturation of vocabulary, auditory discrimination, and visual-motor coordination in children entering the first grade. This test is administered collectively, and has been validated using the reading level attained in the second grade. It is a good test of academic maturity for the prevention of reading disabilities.

Currently being standardized are a reading comprehension test and a battery of verbal tests designed to diagnose the different language functions in children with reading difficulties.

These diagnostic methods designed in Spanish, in Chile, complement the international battery of tests used for diagnosing learning problems and constitute a valid instrument for special education in the Spanish language.

d) Research in Learning Disabilities

The following areas of investigation in Special Education of the learning disabled are among the most interesting:

1) Methods of teaching reading

In Chile, traditionally, the analytic method (letter by letter) of teaching reading was used. In the 1960s the global (or whole word) method derived principally from Northamerican methods, began to be used. In this method the child is taught to perceive and memorize the entire word. Experience has shown that in the Spanish language this method (whole word) is inadequate, because in Spanish each letter is always read in the same way, and the syllables are read as the sum of their letters. On the other hand, in English the letters are pronounced in a different way according to the context they appear in (e.g. letter A: say, author, least, rat, rate). Thus, the global method of teaching reading may be better for teaching children to read English but it is not better for teaching Spanish or Italian.

An interesting new method teaching reading in Spanish has been developed through research. This experimental method consists of the teaching of letters together with an associated gesture that the child makes with his hands (see photos). Each time the child reads a particular letter he must make its associated gesture with his hands. This method uses as its point of departure, the movements and rhythm that the child is able to execute in his spacial and temporal relations.

Once the child has learned to recognize and differentiate the letters, the gestures are abandoned, and the child is then taught some key words in the Spanish language (high frequency words). The key words give the child visual - perceptive recognition and generalization of the written structure, which facilitates the recognition of new words.

The new method is recommended for children who have had difficulties in learning to read due to improper teaching methods.

It is both a normal method of teaching reading and a remedial method. It is original to and designed for use in the Spanish language. Currently the authors are working on the validation of this method. (Alliende F., Condemarín M. y Chadwick M., 1977.)

3) Group teaching method

In another investigation Barriga et al., 1975, have experimented with a group-teaching method of stimulation of children with learning problems. In this method therapeutic pedagogic techniques are combined with the application of operant conditioning techniques.

This method is also still being investigated. It appears that it can be used by a regular teacher when there are no specialists in the school, and for children with minimal learning problems.

3) Prevalence of disturbances

In relation to the prevalence of disorders, the figures for the number of children repeating courses in the first few primary grades, and some partial investigations permit us to calculate that between 15 and 20% of the students in Chile's primary schools experience difficulties in learning to read. Represented within these percentage are children with simple reading retardation, with specific dyslexia, and with other disturbances (speech and language retardation, socio-cultural retardation, sensory-motor problems).

4) Clinical research

Among the clinical investigations, Bravo, 1973, has published a book on the psychopathology of minimal brain dysfunction and academic learning problems. He found a wide overlap between the terms "minimal cerebral dysfunction" and "specific learning disabilities" and that children with this diagnosis presented characterological and emotional alterations in addition to their learning problems.

This author believes that the term minimal cerebral dysfunction has surged into a vacuum in the diagnostic nomenclature for various psychological, neurological and educational disturbances that affect the learning abilities and conduct of students. The use of the term m.b.d. (minimal brain damage) by three different types of specialists has produced confusion and discussion due to the fact that each specialist principally observes the symptoms and alterations of most interest to his particular speciality. These distinct points of view serve to hinder any agreement among neurologists, psychologists, and educators about this syndrome.

One of the important characteristics of children with brain dysfunction is the alteration in the development of personality which many times is a factor in character disorders in adolescence. Minimal brain dysfunction might be the origin of many "character disorders" in adult life.

Condemarín and Salas, studied a sample of dyslexic children, with normal intelligence ten years after the initial diagnosis had been made.

The study of these children revealed the persistence of errors in reading and writing, as well as a lack of interest in reading (Condemarín y Salas, 1975). In addition, the young people were observed to lack initiative, to be dependent, and to show signs of frustration due to their inability to live up to academic expectations.

This investigation showed both the importance of the social and familial attitudes towards the dyslexic child, and the persistence of the reading difficulties ten years later.

We can assume that dyslexia will not resolve itself solely through maturation and that even after treatment the disability persists.

Another study (Bravo, Alvarez and Haeussler, 1978) of dyslexic children, investigated the variables that influence the rehabilitative prognosis in dyslexia. After one year of treatment it was determined that the principal factors in rehabilitation were verbal factors, mainly the immediate assimilation of verbal information and the verbal abstraction of similarities.

In second place, was the WISC I.Q. (Full Scale). The third factor was the Frostig Test. These correlations were made between the test scores before treatment and the reading level after a year of treatment.

Some Chilean researchers have shown interest in studying learning problems from the point of view of the Piagetian theory of development.

One publication showed the relationship between functions basic to reading and the development of thought in Piaget's theories (Alvarez, Orellana, 1978).

Clarke and Chadwick, 1978, studied the differences in the concrete and operational aspects of thought in children with reading and mathematics disabilities. They found that the children with reading disabilities had less developed thought processes according to the stages indicated by Piaget, in comparison with a control group.

e) Publications

In Chile between 1970 and 1977 a number of publications that contain results of research in the diagnosis and treatment of children with reading disabilities have been issued. (Condemarín and Blomguists, 1970; Bravo, (Ed) 1972 and 1974; Condemarín M., Chadwick M. y Milicic N., 1978.)

These reveal a growing interest in both research into the dyslexic disabilities using better empirical criteria and the development of diagnostic and rehabilitative techniques.

The principal limitation to this type of publication and investigation is the scarcity of original tests and teaching methods in the Spanish language which, in turn, is due to the limited amount of research funds and grants available.

Conclusions:

The psychological and educational problems of the children belonging to the sub-culture of poverty constitute the principal cause of general learning problems in an underdeveloped country such as Chile. In addition, specific learning disabilities are increased by the inadequate nutritional and health conditions of the majority of students, which adds to the "risks" of cerebral dysfunction and language and cognitive problems.

Since 1968 in Chile, there has been a growing interest in diagnosis, treatment, and research in reading problems. One of the reasons for this interest is the high percentage of students who fail in the first few grades.

Another cause of this interest is the low number of studies in learning disabilities and the scarcity of teaching methods for learning disabled students in the Spanish language. The simple adaptation of tests and methods from English into Spanish has not been satisfactory and has required original Chilean research.

The work of the Special Education Program of the Universidad Católica of Santiago has had special relevance in the establishment

of a national policy of Special Education. This policy has been principally directed towards the creation of Diagnostic and Rehabilitative Centers for children with learning disabilities, as well as special groups within the regular schools, and psychopedagogical support teams to assist teachers without specialization.

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